

USAMMDA INFORMATION PAPER

PRODUCT: TOPICAL ANTILEISHMANIAL DRUG, PAROMOMYCIN

DESCRIPTION: This product is a topical ointment made from two aminoglycosides, 15 percent paromomycin sulfate and 0.5 percent gentamicin sulfate, in an aquaphilic base for the topical treatment of cutaneous leishmaniasis. Cutaneous leishmaniasis is a potentially disfiguring and serious parasitic disease. Leishmaniasis is one of several names for various tropical diseases, which are caused by protozoa of the genus *Leishmania*. The parasites are transmitted by the bite of infected sandflies of tropical and subtropical zones. The manifestations of this disease may be visceral, mucocutaneous, or cutaneous. Although this illness is predominantly found in tropical and subtropical areas, such as in the Middle East, the Mediterranean coast, sub-Saharan Africa, Mexico, and Central and South America, it is spreading to Spain, southern France and Italy. In addition, there have been confirmed reports of canine leishmaniasis cases in 21 states across the U.S. Current therapy for cutaneous leishmaniasis requires intravenous administration of toxic, metal-based drugs (antimonials). The antimonial compounds are not Food and Drug Administration (FDA) approved and can be administered only as an investigational new drug. Antimonial treatment has undesirable side effects and toxicities, which include vomiting, diarrhea, pancreatitis, elevated liver enzymes and at higher doses pulmonary edema. In addition, antimonial treatment requires evacuation out of the theater of operations, hospitalization, and is expensive (average cost per patient is \$17,000 for hospitalization and treatment; approximately 60 lost duty days).

PROGRAM RELEVANCE to the ARMY: This product supports both the core mission of the Army and the Army Transformation. Of the Army's core competencies, this product supports: "Shape the Security Environment," "Forcible Entry Operations," "Sustained Land Dominance" and "Support Civil Authorities" by protecting U.S. Forces. The soldiers are already infected with *Leishmania* parasites. The Topical Antileishmanial ointment will enhance the survivability and sustainability of U.S. Forces in regions of the world where *Leishmania* is endemic by allowing for local early treatment of the lesion. It will also prevent morale and personnel problems in the unit due to the loss of affected personnel for treatment that requires evacuation out of the theater of operations to Walter Reed Army Medical Center for daily intravenous injections with highly toxic investigational pentavalent antimony drugs. This product supports Future Operational Capability MD97-007 (Preventive Medicine).

ISSUES/ ACTIONS:

- The Institute of OneWorld Health has approached the Army for a patent license for this product. Initial negotiations have been conducted with OneWorld Health for them to act as a co-development partner and continue development, to include applying to the USFDA for approval. OneWorld Health is a non-profit company interested in developing essential and affordable new medicines for neglected diseases. Their initial targets are parasitic diseases in the developing world that lack adequate therapies. The requirement for a co-development partner was included as a Milestone B exit criteria.
- A plan for development beyond the concept and technology development phase has not been prepared as of yet. The Institute of OneWorld Health and the USAMRMC are in the process of negotiating a plan for continued development.
- Army representation on the Integrated Product Team is one of the terms of the Patent License Agreement requested by the Army in order to ensure that the final product satisfies the Army's needs.

BPL #: 338**DA PROJECT/TASK:** Infectious Diseases

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MAMP RANK: 16/36**ARMY ORD:** Antileishmanial Medical Systems

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SCHEDULE:

MS I 3QFY97

MS B 4QFY04

MS FRP TBD

For additional information, contact: Pharmaceutical System Division, DSN 343-2051, Comm. 301-619-2051